COMMENTS

The enclosed is responsive to the Examiner's Final Office Action mailed on February 14, 2003 and is being filed commensurate with the filing of a Request for Continued Examination (RCE) as provided under 37 CFR 1.114. At the time the Examiner mailed the Final Office Action claims 1 through 114 were pending. By way of the present response the Applicant has: 1) amended claims 1-13, 15, 16, 18, 20, 21, 25-28, 31-43, 46-50, 54-92, 94, 95, 103-114; 2) canceled claim 86; and, 3) added claims 115-140. As such claims 1-85 and 87-140 are now pending. The Applicant respectfully requests reconsideration of the present application and the allowance of claims 1-85 and 87-140.

The Examiner's Final Office Action mailed February 14, 2003 maintained the rejection held in previous Office Actions that each of the Applicant's independent claims were anticipated under 35 USC 102(b) by US Patent No. 5,436,955 (hereinafter, Kaewell). A phone conversation held with the Examiner's primary on May 9, 2003 revealed that the "closest" prior art to the present application was US Patent 5,003,591 (hereinafter, "Kauffman") rather than Kaewell. Subsequently, the Applicant discovered another relevant reference, US Patent 4,054,911 (hereinafter, "Fletcher"), which is summarized in at Col. 1, lines 54 – 67 of Kauffman. With an outstanding theory of rejection based upon Kaewell and with the closest prior art being Kauffman and Fletcher, the Applicant has decided to file another RCE with claims directed to subject matter that the

Applicant believes are patentable over Kauffman, Fletcher and Kaewell when considered alone or in some form of combination.

The enclosed response is therefore divided into two main sections: a) a first section that establishes the patentability of the application's present claims over Kauffman and Fletcher alone or in combination; and, b) a second section that establishes the patentability of the application's present claims over Kaewell. The second section largely repeats arguments made in previously filed Office Action responses. The first section is mostly substantive in that it addresses the most relevant known prior art. The second section is mostly procedural as it formally responds to an outstanding rejection based upon the irrelevant Kaewell reference.

The Kauffman and Fletcher References

a) the Kauffman reference

The Kauffman reference discloses a technique for upgrading a remote cable TV (CATV) converter (e.g., located within a CATV customer's house) by continuously broadcasting firmware packages from a centralized "system operator" location (e.g., deeper within the CATV service provider's network) to the remote cable TV converter. When an upgrade or change is to be made to the functionality of a specific converter, the converter accepts and installs the appropriate, continuously broadcasted firmware package. See Kauffman Col. 5, lines 6-55; Col. 6, line 64 through Col. 7, line 2; Col. 9 line 60 through Col. 10, line 16.

Note that the decision as to which firmware package is appropriate for a particular converter is not made by the converter, but rather, by the centralized system operator location. That is, the source of the broadcast informs the destination of the broadcast which firmware is to be used. See, Kauffman, Col. 7, lines 29-35 and Col. 9 lines 3 – 30. Moreover, note that the converter is an "end unit", positioned at the terminating edge of the CATV service provider's network. As such, the destination of the broadcast resides at the outermost edge of a continuous network infrastructure and does not between a pair of networks.

b) the Fletcher reference

The Fletcher reference discloses a technique for continuously broadcasting firmware routines (referred to in Fletcher as "main or control" programs) to a simple terminal from a mainframe-like centralized computing system. The firmware routines appear to be directed to the primary purpose of a terminal: i.e., the displaying of information on the terminal screen. Apparently, different firmware routines are used to display different screen images. In order to provide a terminal with the ability to display a variety of different images, different firmware routines are continuously broadcasted to the terminal by the mainframe. The terminal accepts, installs and executes a particular firmware routine from the broadcast when needed.

As is typical in mainframe environments, intelligence is centralized in the mainframe. As such, the terminal does not decide for itself which firmware routine is appropriate for acceptance, installation and execution at any particular time. Instead the terminal must first receive and comprehend a "permission"

packet, sent by the mainframe, in order to understand exactly which firmware routine the terminal is to accept from the broadcast. That is, the permission packet effectively tells the terminal that it has permission to accept a particular firmware routine from the broadcast. Presumably, the user of the terminal types keyboard strokes that cause the terminal to inform the mainframe that certain information is desired/needed by the user and/or that certain information is desired/needed to be presented in a certain way to the user. The mainframe comprehends the user's needs/requests and sends permission packets to the terminal as appropriate.

During a default initialization sequence, the terminal first loads "bootstrap" software. The bootstrap software is the basic software used by the terminal to interpret the content of permission packets and to correctly receive main or control programs from the broadcast. The installation of the bootstrap is automatic and does not appear to involve any selection or determination process. See Fletcher, Col. 7, lines 18 – 37; Col. 8, lines 24 – 33 and lines 42 – 56; Col. 9, lines 47 – 55; Col. 10, lines 39 – 45; Col. 21, lines 37 – 39; Col. 23, lines 26 – 57; Col. 24, lines 8 – 11. Also, See Kauffman Col. 1, lines 54 – 67.

Therefore Fletcher, similar to Kauffman, teaches an approach where the destination of the broadcast (the terminal) does not possess the intelligence or the authority to determine which firmware routine is currently appropriate for selection from the broadcast. That is, it is the user and/or the mainframe, not the terminal, that "determines" which firmware is to be selected from the broadcast. Moreover, again similar to Kauffman, the destination of the broadcast in Fletcher

is at the outer most terminating edge of a network (e.g., by, for the purposes of viewing Fletcher in its most favored light with respect to the Examiner's position and without being an admission by the Applicant of as much, viewing the mainframe and terminal as a modest network) and cannot be positioned between networks.

c) the present application

Given that both Kauffman and Fletcher, even when considered in a light most favorable to the Examiner's position, are at best still limited to teaching: 1) a broadcast destination that does not possess the authority to determine for itself a particular firmware routine from a plurality of continuously broadcasted firmware routines; and, 2) a broadcast destination that sits at the outer edge of a networked infrastructure. The Applicant respectfully submits that the Applicant's specification is directed to a continuous broadcast scheme that is different from both Kauffman and Fletcher in at least these respects. That is, firstly, the broadcast destination (the "service DSP engine") described in the Applicant's specification possesses the authority to decide for itself which particular firmware algorithm is appropriate (See, the Applicant's specification page 8, lines 6 – 8; page 16, lines 17 – 20; page 18, lines 10 –12). Secondly, the broadcast destination resides between networks within a continuous network infrastructure rather than at the outer edge of a continuous network infrastructure (See, the Applicant's specification page 10, line 22 through page 11, line 19; page 12, lines 12-15; page 13, lines 18-19; page 16, lines 13 – 17; page 18, lines 5 – 8).

Therefore the applicant respectfully submits that any claim element directed to a broadcast destination having the authority to determine for itself an appropriate firmware routine or to a broadcast destination residing between networks is sufficient to cause its corresponding claim to patentable over Kauffman and Fletcher regardless if Kauffman is considered alone, Fletcher is considered alone, or Kauffman and Fletcher are considered in combination.

The Applicant therefore respectfully submits that each the Applicant's independent claims are patentable over Kauffman and Fletcher regardless if Kauffman is considered alone, Fletcher is considered alone, or Kauffman and Fletcher are considered in combination because each independent claim contains a claim element directed to at least one of the patentably differentiating features described just above. Moreover, the Applicant believes that the Applicant's independent claims may be deemed patentable for reasons other than those enumerated immediately above.

Therefore independent claims 1, 25, 41, 54, 69, 83, 90, 115, 130 are patentable at least because: 1) independent claim 1 includes the following claim element "the processing to process the data as it travels between networks"; 2) independent claim 25 includes the claim element: "to be positioned between a pair of networks"; 3) independent claim 41 includes the claim element: "positioned where the data can be processed as it travels between networks"; 4) independent claim 54 includes the claim element: "as the data travels between a telephony network and a data network"; 5) independent claim element 69 includes the claim element: "in order to help transport the data from a first

network to a second network"; 6) independent claim 83 includes the claim elements: "a second means for . . . determining at least one firmware algorithm from the plurality of firmware algorithms . . . and . . . processing data . . . with the at least one firmware algorithm"; 7) independent claim 90 includes the claim element: "the data in transition between networks"; 8) independent claim 115 includes the claim element: "service DSP engine having determined the particular firmware routine from a type of data that its constituent DSP is to process"; 9) independent claim 130 includes the claim element: "service DSP engine to determine a particular firmware routine from a plurality of continuously broadcasted routines".

The Kaewell Reference

The Examiner's current outstanding theory of rejection is based upon the Kaewell reference. The following response is largely repetitive with arguments made in the Applicant's last two Office Action responses.

In order for a "valid" theory of rejection to exist, as a minimum threshold, the prior art material must at least disclose "something" as to how a DSP obtains the software that it executes. As the Examiner continues to stress prior art that has no relation to the manner in which a DSP obtains the software that it executes, the Examiner's theory of rejection continues to blatantly "miss the point".

With respect to the Examiner's theory of rejection (provided on pages 2-3 of the Examiner's Office Action mailed on 2/14/03) to independent claims 1, 25, 41, 54, 69, 83, 90 and response to arguments (provided on pages 7-8 of the

Examiner's Office Action mailed on 2/14/03), the following perspectives are unquestionably correct:

1) Figures 2 and 5 of Kaewell merely disclose a Slot Processing Module (SPM) 10 that is designed to handle information that was received through a wireless broadcast (which, by itself, is an irrelevant consideration);

2) Neither the RX DSP or the TX DSP of Figure 3 use firmware that was received from a continuous broadcasting of firmware (and, their ability to process data at a continuous rate of 20 k-symbols/second is an irrelevant consideration);

3) 1) and 2) above in combination simply do not disclose the continuous broadcasting of firmware to a DSP;

4) Col. 5, line 31 through Col. 6, line 29 of Kaewell merely state that firmware is downloaded to a DSP which, although related to the manner in which a DSP receives firmware, when viewed in a light that is least favorable to the Applicant, merely discloses what the Applicant has already acknowledged as being prior art on page 4, lines 12 – 18 of the Applicant's detailed description;

5) Col. 4, lines 24 – 30 of Kaewell merely disclose the uses of a DSP (e.g., compression, pre-emphasis, FM modulation, etc.) and that the inputs/outputs of a

DSP are retrieved/stored from/to memory – nothing is said as to how the DSP obtains its firmware;

6) the disclosed material of Col. 4, lines 4 –19 of Kaewell has already been preemptively discussed and dismissed by the Applicant's discussion of Col. 4. lines 4-21 of Kaewell on page 21 of the Applicant's response filed on May 3, 2002 – again, no where is it taught or suggested by Kaewell that firmware is continuously broadcasted to a DSP;

The Examiner also cited from Kaewell each of column 2, line 65 to column 3, line 1; column 3, lines 9-29; column 4, lines 28-30; and column 4 lines 53-68 as disclosing the continual broadcasting of firmware. See, the Examiner's Office Action, pgs. 3-4. An examination and discussion of each of these sections of Kaewell, as originally filed on May 3, 2002 is provided immediately below.

Column 2, line 65 to Column 3, line 1 of Kaewell provides:

> The effective sampling rate of the digital cellular system equipment is 48.6 k-samples/sec. and, therefore the 8 k-sample/sec processed speech signal has to be interpolated up to the 48.6 k-sample/sec. rate.

Column 3, lines 9 - 29 of Kaewell provides:

> Fig. **2** shows the basic components of a single analog channel unit at a cell site base station. The hardware comprises a Modulator/Downconverter Module (MDM) **9** and a Slot Processing Module (SPM) **10**. The MDM **9** is connected to

> receiving and transmitting antennaes and performs all the RF and IF processing, while the SPM **10** performs all the baseband processing for the channel unit. Two receiving antennaes A and B are shown providing input signals to the MDM **9**, these being for a space diversity reception system, and the MDM **9** provides an output signal to a single transmitting antennae. Although not shown in Fig. **2**, the SPM **10** can accommodate two MDMs **9**, supporting up to two transmitting channels and four receiving channels.

Column 4, lines 28-30 of Kaewell provides:

> The resulting output from these processes is stored in the DPRAMs to be fetched by the Tx_DSP **15**.

The three above quoted portions of Kaewell simply do not relate to the manner in which firmware is obtained by a DSP. The first quotation (column 2, line 65 to column 3, line 1) simply discusses the data rate of a voice channel. The second quotation (column 3, lines 9-29) simply states that a cell phone base station is comprised of a wireless modulation/demodulation unit (MDM) and a signal processing unit (SPM). The third quotation (column 4, lines 28-30) states that the output values of DSP are stored in a memory. Throughout either of these quotations, the word "firmware" is not used; and, the manner in which a DSP's firmware is obtained by a DSP is not discussed. As such, it is impossible for column 2, line 65 to column 3, line 1 of Kaewell; column 3, lines 9-29 of Kaewell; or, column 4, lines 28-30 of Kaewell to disclose or even suggest the continual broadcasting of firmware to a DSP. Thus, use of these sections of Kaewell as a basis for rejecting the Applicant's claims with respect to their

claiming the continual broadcasting of firmware to a DSP is improper; and, likewise, the Applicant's claims are patentable over these sections of Kaewell.

Column 4 lines 53-68 of Kaewell provides:

> The receive signal is processed by the Rx_DSPs **11** and **12** under the control of the analog firmware to perform the functions of sampling gate combiner **52**. The sampling gate combiner function **52** performs a sampling rate conversion of the 48.6 k-sample/sec. rate to 40.0 k-samples/-sec. to give four samples per FSK symbol and to allow the eventual integer decimation of the speech signals down to the 8 k-sample/sec. PCM (pulse code modulation) rate for interfacing to the T1 transmission system. The speech signals are then further processed, again by the Rx DSPs **11** and **12** under the control of the analog firmware, in voice processing functions **53**. Voice processing function **53** performs the decimation of the speech signals to the T1 lines via the SPDF.

The above quoted portion of Kaewell, again, simply does not relate to the manner in which firmware is obtained by a DSP. The above quotation discloses, at most, that different functions may be performed by a DSP with firmware (e.g., a gate combiner function and a voice processing function). Better said, this portion of Kaewell relates more to how firmware is used rather than to how it is obtained. As such, it is impossible for column 4 lines 53-68 of Kaewell to disclose or even suggest the continual broadcasting of firmware to a DSP. Thus, use of this section of Kaewell as a basis for rejecting the Applicant's claims with respect to their claiming the continual broadcasting of firmware to a DSP is improper; and, likewise, the Applicant's claims are patentable over this section of Kaewell.

Col. 2, lines 1-8 of Kaewell merely state that firmware is downloaded to a DSP which, although related to the manner in which a DSP receives firmware, when viewed in a light that is least favorable to the Applicant, merely discloses what the Applicant has already acknowledged as being prior art on page 4, lines 12 – 18 of the Applicant's detailed description.

For at least these reasons, the Applicant respectfully requests reconsideration of the present application and the allowance of claims 1 through 140.

If there are any additional charges, please charge Deposit Account No. 02-2666.

Respectfully submitted,

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Dated: 5/21/03

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